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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LOICK VERGER, OLIVIER PEYRET,
MARC ARQUES, and MICHEL WOLNY

Appeal 2009-1243
Application 09/914,928
Technology Center 2800

Decided:¹ March 19, 2009

Before KENNETH W. HAIRSTON, JOSEPH F. RUGGIERO and
CARLA M. KRIVAK, *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of
claims 1-10 and 12-20. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ The two-month time period for filing an appeal or commencing a civil
action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date
shown on this page of the decision. The time period does not run from the
Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF CASE

Appellants' claimed invention is an X-radiation imagery device and fabrication of the same. The device includes a detection matrix made of semiconductor material comprising pixels to convert incident X-photons into electric charges, and a silicon-based electric charges reading panel comprising several electronic devices each integrated by pixel. Each detecting matrix is made of a layer of semiconducting material vapour phase deposited on the electric charges reading panel (Spec. 5:16-24).

Independent claim 1, reproduced below, is representative of the subject matter on appeal.

1. X-radiation imagery device comprising at least one detection matrix, said detection matrix comprising:

an electric charges reading panel having an area equal to or larger than about 10 cm x 10 cm, said electric charges reading panel including a monocrystalline silicon substrate integrating a plurality of electronic devices; and a detection layer made of a continuous layer of semiconducting material deposited in vapour phase on the electric charges reading panel, the detection layer converting incident X photons into electric charges, each electronic device and a portion of the detection layer formed thereon forming a respective pixel of the detection matrix.

REFERENCE

Schieber	US 5,892,227	Apr. 6, 1999
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The Examiner rejected claims 1, 2, 4, 7-10, 13-17, and 19 under 35 U.S.C. § 102(e) based upon the teachings of Schieber.

The Examiner rejected claims 3, 12, 18, and 20 under 35 U.S.C. § 103(a) based upon the teachings of Schieber.

The Examiner rejected claims 5 and 6 under 35 U.S.C. § 103(a) based upon the teachings of Schieber and Admitted Prior Art (APA) (Spec. 7:26-27).

Appellants contend Schieber does not teach or suggest a detection layer made of a continuous layer of semiconducting material vapour phase deposited on an electric charges reading panel “that includes a monocrystalline silicon substrate integrating a plurality of electronic devices” (App. Br. 10).

ISSUE

Did Appellants establish the Examiner erred in finding that Schieber teaches Appellants claimed invention?

FINDINGS OF FACT

1. Appellants’ invention teaches a monocrystalline silicon based electric charges reading panel (10) including several electronic devices integrated by pixels (11) in a matrix (Spec. 7:18-25). The electric charges reading panel is used as a substrate on which the matrix of semiconducting based detection material is deposited and converts incident X-photons into electric charges (Spec. 7: 26-31).

2. Schieber teaches a radiation detection system including a single crystal substrate such as Si (Fig. 5) (col. 11, ll. 34-36). A semiconductor radiation detecting material is deposited on the substrate layer forming a bottom electrode (col. 6, ll. 18-20).

PRINCIPLES OF LAW

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Calif., Inc.*, 814 F.2d 628, 631 (Fed. Cir. 1987).

During examination of a patent application, a claim is given its broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

ANALYSIS

Anticipation of Claims 1, 2, 4, 7-10, 13-17, and 19²

The Examiner rejected claims 1, 2, 4, 7-10, 13-17, and 19 under 35 U.S.C. § 102(e) as anticipated by Schieber (Ans. 3). Appellants argue each independent claim 1, 2, 14, and 16 separately (App. Br. 10-12). However, the arguments provided for each of these claims are substantially similar. Further, Appellants provided no arguments for any of the dependent claims. Accordingly, claims 1, 2, 14, 16, and thus, claims 4, 7-10, 13, 15, and 19, stand or fall together. This rejection is addressed with respect to representative claim 1.

Appellants contend that Schieber does not teach 1) a detection layer made of a continuous layer of semiconducting material vapour phase deposited on an electric charges reading panel; and 2) that the electric

² In Appellants’ Brief, Appellants grouped claims 1-10 and 12-20 under this rejection (App. Br.10). However, only claims 1, 2, 4, 7-10, 13-17 and 19 were rejected under 35 U.S.C. § 102. Claims 3, 12, 18 and 20 were rejected under 35 U.S.C. § 103.

charges reading panel includes a monocrystalline silicon substrate integrating a plurality of electronic devices (App. Br. 10; FF 1). Appellants specifically assert that Fig. 7 of Schieber shows that the HgI₂ array (“allegedly the detection layer made of a continuous layer of semiconducting material” (App. Br. 10)) is separate and distinct from the rest of the circuitry and that Fig 4 shows electrodes formed below and above the HgI₂ layer (*id.*).

The Examiner correctly points out that the rejection is with respect to Fig. 5 (which shows a single crystalline silicon substrate/electric charges reading panel), not Fig. 4 (Ans. 8). The Examiner also correctly points out that Fig. 5 shows there are row electrodes integrated with the Si substrate (Ans. 9). As found by the Examiner, there is “no requirement [in the claims] that the electronic devices be embedded within the substrate” (Ans. 9). An integrated circuit, according to Merriam-Webster, is a tiny group of electronic devices, and their connections, produced in or on a small slice of material (such as silicon).³ Thus, giving the term “integrated” its broadest reasonable interpretation, the Examiner is correct in finding that “integrated” does not require embedding within the substrate. Accordingly, with respect to Appellants’ arguments that Fig. 7 shows the electronic devices are separate from the detection layer, Appellants’ claims merely require that the electronic devices be united, not embedded, with the detector (Ans. 9).

The Examiner’s finding that Schieber teaches the detection layer is made of a continuous layer of semiconducting material vapour phase deposited on the electric charges reading panel is also persuasive. Fig. 5

³ Merriam-Webster Student Dictionary, <http://www.wordcentral.com/cgi-bin/student?integrated+circuit> (last visited March 11, 2009), Copyright © 2007 Merriam-Webster, Incorporated.

shows a continuous thin layer HgI_2 semiconducting layer that is vapour phase deposited (Fig. 6) on the electric charges reading panel (Si substrate, FF 2) (Ans. 9).

Therefore, the Examiner has shown that each and every element as set forth in the claims is found, either expressly or inherently described, in Schieber (*Verdegaal Bros.*, *supra*). Thus, Schieber anticipates claim 1 and claims 2, 4, 7-10, 13-17, and 19, which fall with claim 1.

Obviousness of Claims 3, 12, 18, and 20

The Examiner rejected claims 3, 12, 18, and 20 as obvious under 35 U.S.C. § 103(a) over Schieber.⁴

Appellants provided no arguments with respect to this rejection other than to state that because these claims depend from the base claims rejected under 35 U.S.C. § 102, they include all the limitations of those claims and thus are not obvious.

Since Appellants have provided no arguments, then, for the reasons set forth above, claims 3, 12, 18, and 20 are found to be obvious over Schieber.

Obviousness of Claims 5 and 6

The Examiner rejected claims 5 and 6 as obvious under 35 U.S.C. § 103(a) over Schieber and the Admitted Prior Art (APA).

Appellants provided no arguments with respect to this rejection. The Examiner's arguments regarding this rejection are found to be persuasive (Ans. 8). Therefore, claims 5 and 6 are found to be obvious over Schieber and APA.

⁴ Note that the rejection is under 35 U.S.C. § 103(a) not § 103(b) as asserted by Appellants in their Brief (*see* App. Br. 12).

CONCLUSION

Appellants did not establish that the Examiner erred in rejecting claims 1, 2, 4, 7-10, 13-17, and 19 under 35 U.S.C. § 102.

The Examiner also did not err in rejecting claims 3, 5, 6, 12, 18, and 20 under 35 U.S.C. § 103.

DECISION

The Examiner's decision rejecting claims 1-10 and 12-20 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

KIS

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